

# ALFRED R. WALLACE

**T**HE question of how this world and all the things in it were made has, so far as we know, always been asked.

And volunteers have never been slow about coming forward and answering.

¶ For this service the volunteer has usually asked honors and also exemption from unpleasant toil. He has also demanded the joy of riding in a coach, being carried in a palanquin and sitting on a throne clothed in purple vestments trimmed with gold lace or costly furs. Very often the volunteer has also insisted on living in a house larger than he needed, having more food than his system required, and drinking decoctions that are costly, spicy and peculiar.

All of which luxury has been paid for by the people who are told that which they wish to hear.

The success of the volunteer lies in keeping one large ear close to the turf.

¶ Religious teachers have ever given to their people a cosmogony that was adapted to their understanding.

Who made it ?

God made it all.

In how long a time ?

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Six days. ¶ And then followed explanations of what God did each day.

Over against the volunteers with a taste for power and a fine cork-screw discrimination there have been at rare intervals men with a desire to know for the sake of knowing. They were not content to accept any man's explanation. The only thing that was satisfying to them was the consciousness that they were inwardly right. Loyalty to the God within was the guiding impulse of their lives.

In the past, such men have been regarded as eccentric, unreliable and dangerous, and the volunteers have ever warned their congregations against them.

Indeed, until a very few years ago they were not allowed to express themselves openly. Laws have been passed to suppress them, and dire penalties have been devised for their benefit. Laws against sacrilege, heresy and blasphemy still ornament our statute books, but these invented crimes that were once punishable by death, are now obsolete, or only exist in rudimentary forms and manifest themselves in a refusal to invite the guilty party to our Four-o'Clock. This hot intent to support and uphold the volunteers in their explanations of how the world was made, is a universal manifestation of the barbaric state, and is based upon the assumption that God is an infinite George IV.

¶ Six hundred years before Christ, Anaximander, the Greek, taught that animal life was engendered from the earth through the influence of moisture and heat, and that life thus generated gradually evolved into

higher and different forms; all animals once lived in the water, but some of them becoming stranded on the land, put forth organs of locomotion and defense, through their supreme resolve to live. Anaximander also taught that man was only a highly developed animal, and his source of life was the same as that of all other animals; man's present high degree of development having gradually come about through growth from very lowly forms.

Anaxagoras, schoolmaster of Pericles, also made similar statements, and then we find him boldly putting forth the very startling idea that between the highest type of Greek and the lowest type of savage there was a greater difference than between the savage and the ape. He also taught that the earth was the universal mother of all living things, animal and vegetable, and that the fecundation of the earth took place from minute, unseen germs that floated in the air.

According to modern science Anaxagoras was very close upon the trail of truth. But there were only a very few who could follow him, and it took the combined eloquence and tact of Pericles to save his splendid head in the place where nature put it, and Pericles himself was compromised by his leaning toward "Darwinism."

Every man who speaks, expresses himself for others. We succeed only as our thought is echoed back to us by others who think the same. If you like what I say it is only because it is already yours. Moreover, thought is a collaboration, and is born of parents. If a teacher

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does not get a sympathetic hearing, one of two things happens—he loses the thread of his thought and grows apathetic, or he arouses an opposition that snuffs out his life.

And the dead they soon grow cold.

The recipe for popularity is to hunt out a weakness of humanity and then bank on it. No one knows this better than your theological volunteer.

Aristotle, the father of natural history, who early in life had a Pegasus killed under him, taught that the diversity in animal life was caused by a diversity of conditions and environment, and he declared he could change the nature of animals by changing their surroundings. This being true he argued that all animals were once different from what they are now, and that if we could live long enough, we would see that species are exceeding variable.

To explain to child-minds that a Supreme Being made things outright just as they are is easy, but to study and in degree know how things evolved, requires infinite patience and great labor. It also means small sympathy from the indifferent whom the earth has spawned in swarms, and the hatred of the volunteers who ride in coaches, and tell the many what they wish to hear.

¶ The volunteers drove Aristotle into exile, and from his time they had their way for two thousand years, when John Ray, Linnæus and Buffon appeared.

In 1755, Immanuel Kant, the little man who stayed near home and watched the stars tumble into his net, put forth his theory that every animal organism in the

world was developed from a common original germ. ¶ In 1794, Erasmus Darwin, grandfather of Charles Darwin, inspired by Kant and Goethe, put forth his book, "Zoonomia," wherein he maintained the gradual growth and evolution of all organisms from minute unseen germs. These views were put forth more as a poetic hypothesis than as a well-grounded scientific fact, so little attention was paid to Erasmus Darwin's books. The fanciful accounts of creation put forth by Moses three thousand years before were firmly maintained by the entrenched volunteers and their millions of devotees and followers.

But Kant, Goethe, Von Baer, and Geoffrey Saint-Hilaire were planting their outposts throughout the civilized world, honeycombing Christendom with doubt.

¶ In 1852, Herbert Spencer had argued in public and in pamphlets, that species have undergone changes and modifications through change of surroundings, and that the account of Noah and his ark with pairs of everything that flew, crept or ran was fanciful and absurd, so far as we cared to distinguish fact from fiction.

¶ Early in the year 1858, Charles Darwin received from his friend, Alfred Russel Wallace, a paper entitled, "On the Tendency of Varieties to Depart Indefinitely from the Original Type." At this time Darwin had in the hands of the secretary of the Linnæus Society, a paper entitled, "On the Tendency of Species to Form Varieties, or the Perpetuation of Species and Varieties by Means of Natural Selection."

The similarity in title as well as the similarity in treat-

ment of the Wallace theme startled Darwin. He had been working on the idea for twenty years, and had an immense mass of data bearing on the subject, which he some day intended to issue in book form.

His paper for the Linnæus Society simply summed up his convictions. And now here was a man with whom he had never discussed this particular subject, writing an almost identical paper and sending it to him—of all men! ❀ ❀

Well did he pinch his leg, and call in his wife, asking her if he were alive or dead. Straightway he went to see Sir Charles Lyell and Sir Joseph Hooker, both more eminent than he in the scientific world, and laid the matter before them. After a long conference it was decided that both papers should be read the same evening before the Linnæus Society, and this was done on the evening of July 1, 1858.

Darwin then decided to publish his "Origin of Species," which in his preface he modestly calls an "Abstract." The publication was hastened by the fact that Wallace was compiling a similar work. After giving Wallace full credit in his most interesting "Introduction," and reviewing all that others had said in coming to similar conclusions, Darwin fired his shot heard 'round the world. And no man was more delighted and pleased with the echoing reverberations than Alfred Russel Wallace, as he read the book in far-off Australia.

The honor of discovering the Law of Evolution, and lifting it out of the hazy realms of hypothesis and poetry into the sunlight of science, will ever be shared between

Charles Robert Darwin and Alfred Russel Wallace,  
brothers in spirit and lovers to the end of their days.

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**I**N an insignificant village of England, now famous alone because he began from there his world explorations, Alfred Russel Wallace was born in 1822.

He was one of a large family, of the middle class, where work is as natural as life, and the indispensable virtues are followed as a means of self-preservation. It is most unfortunate to attain such a degree of success that you think you can waive the decalog and give Nemesis the slip.

About the year 1840, the railroad renaissance was on in England, and young Wallace, alive, alert, active, did his turn as apprentice to a surveyor.

Chance is a better schoolmaster than Design.

All boys have a taste for tent life, and healthy youngsters not quite grown, with ostrich digestions, passing through the nomadic stage, revel in hardships & count it a joy to sleep on the ground where they can look up at the stars, and eat out of a skillet.

A little later we find Alfred working for his elder brother in an architect's office, gazing abstractedly out of the window betimes, and wishing he were a ground-squirrel, fancy free on the heath and amid the heather, digging holes, thus avoiding introspection. "Houses are prisons," he said, and sang softly to himself the song of the open road.

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I think I know exactly how Alfred Russel Wallace then felt, from the touchstone of my own experience, and I think I know how he looked, too, all confirmed by an East Aurora incident.

Some years ago, one fine day in May, I was helping excavate for the foundation of a new barn. All at once I felt that some one was standing behind me looking at me. I turned around and there was a tall, lithe, slender youth in a faded college cap, blue flannel shirt, ragged trousers and top boots.

My first impression of him was that he was a fellow who slept in his clothes—a plain “Weary”—but when he spoke there was a note of self-reliance in his low, well-modulated voice that told me he was no mendicant. Voice is the true index of character.

“My name is Wallace and I have a note to you from my father”—and he began diving into pockets, and finally produced a ragged letter that was nearly worn out through long contact with a perspiring human form divine—or partially so.

I seldom make mad haste about reading letters of introduction, and so I greeted the young man with a word of welcome, and gave him a chance to say something for himself.

He was English that was very sure, and Oxford English at that. “You see,” he began, “I am working just now over on the Hamburg & Buffalo Electric Line, stringing wires. I get three dollars a day because I’m a fairly good climber. I wanted to learn the business, so I just hired out as a laborer, and they gave me the hardest

job, thinking to scare me out, but that was what I wanted"—and he smiled modestly and showed a set of incisors as fine and strong as dog teeth. "I want to remain with you a week and pay for my board in work," he cautiously continued.

"But about your father—Mr. Wallace—do I know him?"

"I think so—he has written you several letters—Alfred Russel Wallace!"

You could have knocked me down with a ladyslipper.

¶ I opened the letter and unmistakably it was from the great scientist, "introducing my baby boy."

I never met Alfred Russel Wallace, and I know if I should, I would find him very gentle, kindly and simple in all his ways—as really great men ever are.

He would not talk to me in Latin nor throw off technical phrases about great nothings, and I would feel just as much at home with him as I did with Ol' John Burroughs the last time I saw him, leaning up against a country railway station in shirt-sleeves, chewing a straw, exchanging salutes with the engineer on a West Shore jerkwater. "S' long, John!" called the going one as he leaned out of the cab window.

"S' long, Bill, and good luck to you," was the cheery answer ❀ ❀

But still all of us have moments when we think of the world's most famous ones as being surely eight feet tall, and having voices like fog-horns.

"I can do most any kind of hard work, you know"—I was aroused from my little mental excursion, and

noticed that my visitor had hair of a light yellow like a Swede from Hennepin County, Minnesota, and that this hair was three shades lighter than his bronzed face ❁ ❁

“I can do any kind of work, you know, and if you will just loan me that pick”—

And I handed him the pickaxe.

Young Wallace remained with us for a week, asking for nothing, doing everything, even to helping the girls wash dishes. That he was the son of a great man, no one would have ever learned from his own lips. In fact, I am not sure that he was impressed with his father's excellence, but I saw there was a tender bond between them, for he haunted the village postoffice, morning, noon and night, looking for a letter from his father. When it came he was as happy as a woodchuck. He showed me the letter—it was nine finely written pages. But to my disappointment not a word about marsupials, siamang or syndactylæ, just news about William, John, Mary and Benjamin, with references to chickens and cows, and a new greenhouse, with a little good advice about keeping right hours and not overeating. ¶ The young man had spent three years at Oxford, and was an electrical engineer. He was intent on finding out just as much about the secrets of American railroad construction as he possibly could. As for intellect, I did not discover any vast amount, perhaps he did n't either. But we all enjoyed his visit, and when he went away I presented him with a clean, second-hand flannel shirt and my blessing.

**F**ROM the appearance of the young man I imagine that Alfred Russel Wallace at twenty-one was very much such a man as his son, who did us such good work at the Roycroft with pick and shovel. Alfred was earnest, intent, strong, and had a deal of quiet courage that he was as unconscious of as he was of his digestion.

He taught school, and to interest his scholars he would take them on botanical excursions. Then he himself grew interested, and began to collect plants, bugs, bees and birds on his own account.

By 1848, the confining walls of the school had become intolerable to Wallace and he started away on a wild-goose-chase to Brazil, with a chum by the name of Henry Walter Bates, an ardent entomologist. Alfred had no money either, but Bates had influence, and he cashed it in by arranging with the Curator of the British Museum, that any natural history specimens of value which they might gather and send to him, would be paid for. And so something like a hundred pounds was collected from several scientific men and handed over, as advance payment for the wonderful things that the young men were to send back.

They embarked on a sailing vessel that was captained by a kind kinsman of Bates, so the fare was nil in consideration of services rendered constructively.

Arriving at Brazil the young men began their collecting of historic specimens. They got together a very creditable collection of birds' eggs and sent them back

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by the captain of the ship they came out on,—this as an earnest of what was to come.

Bates and Wallace were together for a year.

Bates insisted on remaining near the white settlements. But Wallace wanted to go where white men had never been. So alone he went into the forests, and for two years lived with the natives and dared the dangers of jungle fever, snakes, crocodiles and savages. For a space of ten months he did not see a single white person ❄ ❄

He collected nearly ten thousand specimens of birds, which he skinned and carefully prepared so they could be mounted when he returned to England; there was also a nearly complete Brazilian herbarium, and a finer collection of birds' eggs than any museum of England could boast.

This collection represented over three years' continuous toil. All the curious things were packed with great care and placed on board ship.

And so the young naturalist sailed away for England, proud and happy, with his great collection of entomological, botanical and ornithological specimens.

But on the way the ship took fire, and the collection was either burned or ruined by soaking salt water.

That the crew and their sole passenger escaped alive was a wonder. Wallace on reaching England was in a sorry plight, being destitute of clothes and funds.

And there were unkind ones who did not hesitate to hint that he had only been over to Ireland working in a peat bog, and that his knowledge of Brazil was got-

ten out of Humboldt's books. ¶ In one way Wallace surely paralleled Humboldt—both lost a most valuable collection of natural history specimens by shipwreck.

¶ Several of the good men who had advanced money now asked that it be paid. Wallace set to work writing out his recollections, the only asset that he possessed.

¶ His book, "Travel on the Amazon and Rio Negro," had enough romance in it so that it floated.

Royalties paid over in crisp Bank of England notes made things look brighter.

Another book was issued called, "Palm Trees and their Uses," and proved that the author was able to view a subject from every side, and say all that was to be said about it. "Wallace on the Palm" is still a text-book.

¶ The debts were paid and Alfred Russel Wallace at thirty was square with the world, the possessor of much valuable experience. He also had five hundred pounds in cash, with a reputation as a writer and traveler that no longer caused bookworms to sneeze.

¶ Having paid off his obligations, he felt free to again leave England, a thing he vowed he would not do so long as his reputation was under a cloud.

This time he had selected for a natural history survey a section of the world really less known than South America.





EARLY in 1854, Wallace reached Asia. He had decided that he would make the first, and the best collection of the flora & fauna of the Malay Archipelago that it was possible to make. White men had skirted the coast of many of the islands, but as to what there was inland was mostly conjecture and guesswork.

How long it would take Wallace to make his Malaysian natural history survey he did not know, but in a letter to Darwin he stated that he expected to be absent from England at least two years.

He was gone eight years, & during this time, walked, paddled or rode horseback fifteen thousand miles, and visited many islands never before trod by the foot of a white man.

The city of Singapore served him as a base or headquarters, because from there he could catch trading ships that plied among the islands of the Archipelago; and to Singapore he could also ship and there store his specimens.

From Singapore he made sixty separate voyages of discovery ❀ ❀

In all he sent home to England over a hundred and twenty-five thousand natural history specimens, including about ten thousand birds, which later on, were all stuffed and mounted under his skillful direction.

¶ On returning to England, Wallace took six years in preparation of his book "The Malay Archipelago," a most stupendous literary undertaking, that covers the

subjects of botany, geology, ornithology, entomology, zoology and anthropology, in a way that serves as a regular mine of information and suggestion for natural history workers.

The book in its original form, I believe, sold for ten pounds—fifty dollars, and was issued to subscribers in parts. It was bought, not only by students, but by a great number of general readers, there being enough adventure mixed up in the science, to spice what might otherwise be rather dry reading.

For instance, there is a chapter about killing orangutans that must have served my old friend, Paul du Chaillu, as excellent raw stock in compiling his own recollections.

Wallace states that the only foe for which the orang really has a hatred is the crocodile. It seems to share with man a shuddering fear of snakes although orangs have no part in making Kentucky famous. But the crocodile is his natural and hereditary enemy. And as if to get even with this ancient foe who occasionally snaps off a young orang in his prime, the orangs will often locate a big crocodile, and jumping on his back beat him with clubs, and when he opens his gigantic mouth, the female orangs will fill the cavity with sticks and stones and keep up the fight until the crocodile succumbs and quits this vale of crocodile tears.

The orang is distinct and different from the chimpanzee or gorilla which is found only in Western Africa. ¶ In Borneo the “man-ape” is quite numerous. This is the animal that has given rise to all those tales about

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"the wild man of Borneo," which that good man, P. T. Barnum, kept alive by exhibiting a fine specimen. Barnum's original "wild-man" lived at Waltham, Massachusetts, and belonged to the Baptist Church. He recently died worth a hundred thousand dollars, which money he left to found a school for young ladies.

¶ The orang or mias, hides in the swampy jungles, and very rarely comes to the ground. The natives regard them as a sort of sacred object, and have a great horror of killing them. Indeed, a person who kills a man-ape, they regard as a murderer, and so when Wallace announced to his attendants that he wanted to secure several specimens of these "wild-men of the woods," they cried, "Alas! he is making a collection, it will be our turn next!" And they fled in terror.

Wallace then hired another set of servants and resolved to make no confidants, but just go ahead and find his game ❀ ❀

He had hunted for weeks through forest and jungle, but never a glimpse or sight of the man-ape! He had almost given up the search, and concluded with several English scientists that this orang-utan was a part of that great fabric of pseudo-science invented by imaginative sailormen, who took most of their inland little journeys around the capstan. And so musing, seated in the doorway of his bamboo house, he looked out upon the forest, and there only a few yards away, swinging from tree to tree was a man-ape. It seemed to him to be about five times as large as a man.

He seized his gun and approached, the beast stopped,

glared and railed at him in a voice of wrath. It broke off branches and threw sticks at him.

Wallace thought of the offer made him by the South Kensington Museum: "One hundred pounds in gold for an adult male—skin and skeleton to be properly preserved and mounted—seventy-five pounds for a female."

The huge animal showed its teeth, cast one glance of scornful contempt on the puny explorer and started on, swinging thirty feet at a stretch and catching hold of the limbs with its two pairs of hands.

Wallace grasped his gun and followed on, lured by the demoniac shape. A little of the superstition of the natives had gotten into his veins—he dare not kill the thing unless it came toward him, and he had to shoot it in self-defense.

It traveled in the trees about as fast as he could on the ground. Occasionally it would stop and chatter at him, throwing sticks in a most human way as if to order him back.

Finally, the instincts of the naturalist got the better of the man, and he shot the animal. It came tumbling to the ground with a terrific crash, grasping at the vines and leaves as it fell.

It was quite dead, but Wallace approached it with great caution. It proved to be a female, of moderate size, in height about three and a half feet, six feet across from finger to finger. Needless to say that Wallace had to do the skinning, and the mounting of the skeleton alone. His servants had chills of fear if asked

to approach it. The skeleton of this particular orang can now be seen in the Derby Museum.

In a few hours after killing his first orang Wallace heard a peculiar crying in the forest, and on search found a young one, evidently the baby of the one he had killed. The baby did not show any fear at all, evidently thinking it was with one of its kind, for it clung to him piteously, with an almost human tenderness.

Says Wallace: When handled or nursed it was very quiet and contented, but when laid down by itself would invariably cry; and for the first few nights was very restless and noisy. I soon found it necessary to wash the little mias as well. After I had done so a few times it came to like the operation, and after rolling in the mud would begin crying, and continue until I took it out and carried it to the spout, when it immediately became quiet, although it would wince a little at the first rush of the cold water, and make ridiculously wry faces while the stream was running over its head. It enjoyed the wiping and rubbing dry amazingly, and when I brushed its hair seemed to be perfectly happy, lying quite still with its arms and legs stretched out, while I thoroughly brushed the long hair of its back & arms. It was a never failing amusement to observe the curious changes of countenance by which it would express its approval, or dislike, of what was given to it. The poor little thing would lick its lips, draw in its cheeks, and turn up its eyes with an expression of the most supreme satisfaction, when it had a mouthful particularly to its taste. On the other hand, when its food was not sufficiently sweet or palatable, it would turn the mouthful about with its tongue for a moment, as if trying to extract what flavor

there was, and then push it all out between its lips. If the same food was continued, it would proceed to scream and kick about violently, exactly like a baby in a passion ♣ When I had had it about a month it began to exhibit some signs of learning to run alone. When laid upon the floor it would push itself along by its legs, or roll itself over, and thus make an unwieldy progression. When lying in the box it would lift itself up to the edge in an almost erect position, and once or twice succeeded in tumbling out. When left dirty or hungry, or otherwise neglected, it would scream violently till attended to, varied by a kind of coughing noise, very similar to that which is made by the adult animal. If no one was in the house, or its cries were not attended to, it would be quiet after a little while; but the moment it heard a footstep would begin again, harder than ever. It was very human.



THE most lasting result of the wanderings of Alfred Russel Wallace consists in his having established what is known to us as "The Wallace Line."

This line is a boundary that divides in a geographical way that portion of Malaysia which belongs to the continent of Asia from that which belongs to the continent of Australia.

The Wallace Line covers a distance of more than four thousand miles, and in this expanse there are three islands in which Great Britain could be set down without anywhere touching the sea.

Even yet the knowledge of the average American or European is very hazy about the size and extent of

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the Malay Archipelago, although through our misunderstanding with Spain, which loaded us up with possessions we have no use for, we have recently gotten the geography down and dusted it off a bit.

There is a book by Mrs. Rose Innes, wife of an English official in the Far East, who among other entertaining things, tells of a head-hunter chief who taught her to speak Malay, and she, wishing to reciprocate, offered to teach him English, but the great man begged to be excused, saying, "Malay is spoken everywhere you go, east, west, north or south, but in all the world there are only twelve people who speak English," and he proceeded to name them.

Our assumptions are not quite so broad as this, but few of us realize that the Protestant Christian Religion stands fifth in the number of communicants, as compared with the other great religions, and that against our eighty millions of people in America, the Malay Archipelago has over two hundred millions.

¶ Wallace found marked geological, botanical and zoological differences to denote his line. And from these things he proved that there had been great changes, through subsidence and elevation of the land. At no very remote geologic period, Asia extended clear to Borneo, and also included the Philippine Islands. This is shown by the fact that animal and vegetable life in all of these islands are almost identical with life on the mainland—the same trees, the same flowers, the same birds, the same animals.

As you go westward, however, you come to islands

which have a very different flora and fauna, totally unlike that found in Asia, but very similar to that found in Australia.

Australia, be it known, is totally different in all of its animal and vegetable phenomena from Asia.

In Australia, until the white man very recently carried them across, there were no monkeys, apes, cats, bears, tigers, wolves, elephants, horses, squirrels or rabbits. Instead there were found animals that are found nowhere else, and which seem to belong to a different and so-called extinct geologic age, such as the kangaroo, wombats, the platypus—which the sailors used to tell us was neither bird nor beast, and yet was both. In birds, Australia has also very strange specimens, such as the ostrich which cannot fly, but can outrun a horse and kills its prey by kicking forward like a man. Australia also has immense mound-making turkeys, honeysuckers, cockatoos, but no woodpeckers, quail or pheasants.

Wallace was the first to discover that there are various islands, some of them several hundred miles from Australia, where the animal life is identical with that of Australia. And then only a comparatively few miles away are islands which have all the varieties of birds and beasts found in Asia. But this line that once separated continents is in places but fifteen miles wide, and is always marked by a deep-water channel, but the seas that separate Borneo and Sumatra from Asia, although wide, are so shallow that ships can find anchorage anywhere.

The Wallace Line, proving the subsidence of the sea and upheaval of land, has never been seriously disputed, and is to many students the one great discovery by which Wallace will be remembered. \* Wallace's book on "The Geographical Distribution of Animals" sets forth the interesting details of how he came to discover the Line, in a most interesting manner.

It was in 1855, that Wallace, alone in the wilds of Malay became convinced of the scientific truth that species were an evolution from a common source, and he began making notes of his observations along this particular line of thought. Some months afterward he wrote out his belief in the form of an essay, but then he had no definite intention of what he would do with the paper beyond keeping it for future reference when he returned to England. In the fall of 1857, however, he decided to send it to Darwin to be read before some scientific society, if Darwin considered it worthy. And this paper was read on the evening of July 1st, before the Linnæus Society, with one by Darwin on the same subject, written before Wallace's paper arrived, wherein the identical views are set forth. Darwin and Wallace expressed what many others had guessed or but dimly perceived.





THREE out of the six immortal modern scientists began life as surveyors and civil engineers—Wallace, Tyndall and Spencer. From the number of eminent men, not forgetting Leonardo da Vinci, Washington, Lincoln, Ulysses S. Grant, Henry Thoreau—aye! nor old John Brown, who carried a Gunter's chain and manipulated the transit—we must conclude that there is something in the business of surveying that conduces to clear thinking and strong independent action.

If I had a boy who by nature and habit was given to futilities, I would apprentice him to a civil engineer.

¶ When two gangs of men begin a tunnel, working toward each other from different sides of a mountain, dreams, poetry, hypothesis and guesswork had better be omitted from the equation. Here, at last, is a case where metaphysics has no bearing. It is a condition that confronts them, not a theory.

Theological explanations are assumptions built upon hypotheses, and your theologian always insists that you shall be dead before you can know.

If a bridge breaks down or a fire-proof building burns to ashes, no explanation on the part of the architect can explain away the miscalculation; but your theologian always evolves his own fog, into which he can withdraw at will, thus making escape easy.

Darwin, Huxley, Spencer, Tyndall and Wallace all had the mathematical mind. ¶ Nothing but the truth would satisfy them. In school, you remember how we

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sometimes used to work on a mathematical problem for hours or days. Many would give it up. A few of the class would take the answer from the book, and in an extremity force the figures to give the proper result. Such students, it is needless to say, never gained the respect of either class or teacher—or themselves. They had the true theological instinct.

But a few kept on until the problem was solved, or the fallacy of it had been discovered. In life's school such were the men just named, and the distinguishing feature of their lives was that they were students and learners to the last.

Of this group of scientific workers, Alfred Russel Wallace alone survives, aged eighty-two at this writing, still studying, earnestly intent upon one of nature's secrets that four of his great colleagues years ago labeled, "Unknown," and the other two marked, "Unknowable."

To some it is an anomaly and contradiction that a lover of science, exact, cautious, intent on certitude, should accept a belief in personal immortality. Still, to others this is regarded as proof of his superior insight.

All thinking men agree that we are surrounded by phenomena that to a great extent are unanalyzed; but Herbert Spencer, for one, thought it a lapse in judgment to attribute to spirit intervention, mysteries which could not be accounted for on any other grounds. It was equal to that sin against science which Darwin committed, and which he atoned for in contrite public confession, when he said, "It surely must be this, other-

wise what is it? Hence we assume \* \* \* \* \*

Some recent writers have sought to demolish Wallace's argument concerning spiritism by saying he is an old man and in his dotage. Wallace once wrote a booklet entitled, "Vaccination a Fallacy," which created a big dust in Doctor's Row, and was cited as corroborative proof, along with his faith in socialism, that the man was mentally incompetent.

But this is a deal worse excuse for argument than anything Wallace ever put forth. The real fact is that Wallace issued a book on spiritism in 1874, and in 1896, reissued it with amendments, confirming his first conclusions. So he has held his peculiar views on immortality for over thirty years, and moreover his mental vigor at eighty-two is unimpaired.

Whether the proof he has received as to the existence of disembodied spirits is sufficient for others is very uncertain, but if it suffices for himself, it is not for us to quibble. Wallace agrees to allow us to have our opinions if we will let him have his.

His views are in no sense those of Christianity, rather they might be called those of Theosophy, as the personal God and the dogma of salvation and atonement are entirely omitted.

The doctrine of Evolution he carries into the realm of spirit. His belief is that souls reincarnate themselves many times for the ultimate object of experience, growth and development. He holds that this life is the gateway to another, but that we should live each day as though it were our last. To this effect we find in a

recent article, Wallace quotes a little story from Tolstoy: A priest seeing a peasant in a field plowing, approached him and asked, "How would you spend the rest of this day if you knew you were to die to-night?"

¶ The priest expected the man, who was a bit irregular in his church-going, to say, "I would spend my last hours in confession and prayer."

But the peasant replied, "How would I spend the rest of the day if I were to die to-night?—why, I'd plow!"

¶ Wallace holds that it is better to plow than to pray, and in fact, rightly understood, good plowing is prayer. All useful effort is sacred, and nothing else is or can be.

¶ Wallace believes that the only fit preparation for the future lies in improving the present.

Please pass the dotage.

